

EFFICACY REVIEW

DATE: IN 3-23-00 OUT 4-13-00

FILE OR REG. NO. 432-ILI

PETITION OR EXP. PERMIT NO. _____

DATE DIV. RECEIVED March 21, 2000

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TYPE PRODUCT(S): (I,)D, H, F, N, R, S _____

DATA ACCESSION NO(S). 450693-01,-02,-03 &-04; D264364; S577285;
Case # 063626; AC:166

PRODUCT MGR. NO. 03-Layne/Werrell

PRODUCT NAME(S) DeltaGard® 100 RTU Insecticide

COMPANY NAME Agrevo Environmental Health

SUBMISSION PURPOSE Provide performance data in support of claims
for kill & up to 4 months residual vs. crawling
& flying insects and other arthropods.

CHEMICAL & FORMULATION Deltamethrin 0.01%
(8.26 lbs./gal. ready-to-use liquid spray)

CONCLUSIONS & RECOMMENDATIONS The data presented in EPA Accession (MRID) Number 450693-01, having been obtained from a standard laboratory test conducted according to requirements of § 95-11(b) (1) through (7) on p. 268 and meeting the standard of § 95-11(c) (2) (ii) subpart (A) (a) on p. 270 of the Product Performance Guidelines, are adequate to demonstrate the ability of a formulation identical in concentration to the subject product to kill Lone Star tick, *Amblyomma americanum*, both rapidly as indicated by 44% mean mortality at 10 minutes, 92% mean mortality at 1 hour, 100% mortality at 3 hours, and thoroughly as indicated by 100% mortality at 24 hours following direct spray of adult ticks with 1.0 gm of solution. In a similar laboratory test, data presented in MRID No. 450693-04, having been obtained from a test conducted according to the same requirements and meeting the same standard are adequate to demonstrate the ability of the same formulation as in the preceding to rapidly kill nymphal deer tick, *Ixodes scapularis*, as indicated by total knockdown at 15 minutes after exposure to glass plates on which 1.0 gm of formulation had been sprayed, with total knockdown continuing at 30 and 60 minutes, and 100% mortality at 24 hours.
(to be continued)

Data presented in MRID No. 450693-02, having been obtained from a standard laboratory test conducted according to the same procedure and meeting the same standard as previously discussed, are adequate to demonstrate the ability of the same formulation as in the preceding to both rapidly kill German cockroach, *Blattella germanica*, as indicated by 23% knockdown at 30 minutes following exposure of 1 minute on concrete, 87% KD at 60 minutes after the same exposure, followed by 73% mortality at 24 hours and 90% mortality at 4 days after treatment; and residually kill the same test insect as indicated by 100% KD at 30 minutes following 1 minute exposure on ceramic tile, 76% KD at 30 minutes on concrete and 67% KD at 30 minutes on plywood, following 30 minutes exposure to residues aged 1 month/ followed by 100% KD at 60 minutes following 1 minute exposure on ceramic tile, 100% KD on concrete and 80% KD on plywood at 60 minutes following 30 minutes exposure to 1-month-old residues and 100% mortality at 24 hours on all 3 surfaces/ 100% KD, 23% KD and 60% KD on the respective surfaces at 30 minutes and 100% KD, 57% KD and 90% KD at 60 minutes following the same respective exposures to 2-month-old residues and 100%, 100% and 90% mortality at 24 hours and 100%, 100% and 100% mortality at 4 days; 59% KD, 20% KD and 31% KD on the respective surfaces at 30 minutes and 89% KD, 60% KD and 76% KD at 60 minutes following the same respective exposures to 3-month-old residues and/ 100%, 80% and 76% mortality at 24 hours and 100%, 87% and 48% mortality at 4 days; 75% KD, 3% KD and 40% KD on the respective surfaces at 30 minutes and 93% KD, 10% KD and 77% KD at 60 minutes following the same respective exposures to 4-month-old residues and 100%, 28% and 100% mortality both at 24 hours and at 4 days; 83% KD, 0% KD and 87% KD on the respective surfaces at 30 minutes and 100% KD, 0% KD and 100% KD at 60 minutes following the same respective exposures to 5-month-old residues and 100%, 7% and 100% mortality both at 24 hours and at 4 days; 77% KD, 3% KD and 50% KD on the respective surfaces at 30 minutes and 90% KD, 3% KD and 83% KD at 60 minutes following the same respective exposures to 6-month-old residues and 100%, 33% and 83% mortality at 24 hours and 100%, 43% and 90% mortality at 4 days; 100% KD, 0% KD and 97% KD on the respective surfaces both at 30 minutes and at 60 minutes following the same respective exposures to 9-month-old residues and 100%, 7% and 80% mortality at 24 hours and 100% and 90% mortality on ceramic tile and plywood respectively at 4 days, with observations on concrete suspended due to low mortality in earlier testing; and 100% KD, 0% KD and 48% KD on the respective surfaces at 30 minutes and 100% KD and 0% KD respectively on ceramic tile and concrete at 60 minutes, with observations on plywood suspended due to low mortality in earlier testing, following the same respective exposures to 12-month-old residues and 100%, 0% and 72% mortality at 24 hours and 100%, 0% and 97% mortality at 4 days.

In the same data volume are presented results obtained from similar testing meeting the same requirements and standard using the same formulation previously discussed which are adequate to demonstrate the ability to produce early rapid kill of cat flea, *Ctenocephalides felis*, as indicated by 57% KD at 1 month, 27% KD at 2 months and 48% KD at 3 months at 30 minutes after exposure, 86% KD, 53% KD and 66% KD at 1, 2 and 3 months at 60 minutes after exposure, and 89%, 63% and 79% mortality at 1, 2 and 3 months, after 24 hours; and also residual kill as indicated by 3% KD at 4 months, 23% KD at 5 months and 10% KD at 6 months (to be continued)

at 30 minutes after exposure and 53% KD, 43% KD and 40% KD at 4, 5 and 6 months at 60 minutes after exposure, and 63%, 40% and 40% mortality at 4, 5 and 6 months; and 0% KD at 9 months and 47% KD at 12 months at 30 minutes after exposure and 73% KD and 37% KD at 9 months and 12 months at 60 minutes after exposure, and 87% and 60% mortality at 9 months and 12 months, after 24 hours. All flea testing was on carpet, and all applications for both German cockroach and cat flea consisted of 1 gm deposits on 9-cm diameter circles of substrates.

Data presented in MRID No. 450693-03, having been obtained from a standard laboratory test conducted according to the same procedure and meeting the standard of § 95-11(c)(2)(ii)(B)(a) on p. 270 of the Product Performance Guidelines, are adequate to demonstrate the ability of the same formulation as in the preceding data volumes to rapidly kill yellow-fever mosquito adults, *Aedes aegypti*, as indicated by 93.1% mean KD at 5 minutes, 100% mean KD at 10 and 30 minutes, and 71.6% mean mortality at 1 hour and 100% mean mortality at 24 hours following exposure to glass plates on which 1 gm had been sprayed. This is the same deposit previously found effective against house fly adults, *Musca domestica*, of both sexes in our previous review of August 30, 1999.

Since the registrant has responded to the reservations expressed in our prior review with respect to German cockroach, carpenter ants, miscellaneous ants, cat flea and ticks due to the data reflecting a higher concentration of deltamethrin than in the subject product by submitting additional data in which the formulation used in the testing was identical in concentration to the subject product, we believe sufficient data exists to support the claims for crawling and flying insects and other arthropods when the subject product is applied according to label directions.

With respect to the similar deltamethrin ready-to-use formulations with higher concentrations than the subject product which were previously reviewed as EPA File Symbol 432-ILT on August 27, 1999 for the 0.02% formulation and as EPA File Symbol 432-ILO on August 31, 1999 for the 0.03% formulation, the data presented in MRID Number 450693-02 supplements data previously found acceptable to support claims for German cockroach, carpenter ants, miscellaneous ants, crickets, cat flea and house fly. These additional data support residual control up to 4 months or more for German cockroach on ceramic tile and plywood and through 3 months and at 5 and 6 months for the 0.02% formulation and slightly below control level for 1 through 6 months with cat flea and control at 9 months and slightly below control level at 12 months. These same data support residual control up to 12 months on ceramic tile and plywood and up to 6 months on concrete for German cockroach for the 0.03% and slightly below control level at 1, 4, 5 and 6 months with cat flea and at control level at 2, 3, 9 and 12 months for the same formulation.

RL Vern L. McFarland, IB